



**Transmission Business Line (TBL)**  
**Transmission Scheduling Procedure #2 - NI**  
**Westside Northern Intertie Curtailments South To North**  
Posted July 15, 2004  
Reposted for Formatting Updates August 27, 2004

Approved: Cathy Ehli /s/

July 1, 2004

---

Cathy Ehli, Acting Manager, TMS

---

Date

Approved: Gloria Carter /s/

July 1, 2004

---

Gloria Carter, Manager, Real-Time Scheduling

---

Date

## Table of Contents

I.	Purpose .....	2
II.	Procedure .....	2
A.	Capacity Desk Procedure .....	2
B.	Preschedule Procedure .....	3
C.	Real Time .....	4
III.	Discussion.....	8
IV.	Revisions.....	9
	Appendix B: Puget Sound Area Diagram .....	10
	Appendix E: PSANI Terms And Definitions.....	11
	Appendix F: PSANI (Puget Sound And Northern Intertie) Scheduling Limits Guide For Customers .....	12

## I. Purpose

To manage transmission in the Puget Sound area that affects both load service to utilities in the Puget Sound area and return of Canadian Entitlement power to British Columbia over the Westside Northern Intertie (WNI).

## II. Procedure

In the event the WNI South to North (S>N) Operational Transfer Capacity (OTC) drops below the contract capacity for return of the Canadian Entitlement, scheduling limits will be imposed on the Northern Puget Sound Area utilities (Seattle City Light, Puget Sound Energy, Snohomish PUD, Intalco and BPA Power Business Line public customer load North of Seattle (Blaine, Orcas, Sumas, Tanner Electric and Whatcom PUD)), as well as on Canadian Entitlement deliveries. Implementation of such scheduling limits is also known as the Puget Sound Area / Northern Intertie Scheduling Limit (PSANI) procedure.

### A. Capacity Desk Procedure

1. If the Outage Office forecast shows that the Northern Intertie (NI) S>N OTC is not high enough to return the Canadian Entitlement (See Appendix C for current Canadian Entitlement amounts), the Outage Office will then:
  - a. Compute a target WNI S>N OTC.
  - b. Compute scheduling limits for Northern Puget Sound area utilities.
  - c. Compute non-target WNI S>N OTC.
  - d. Communicate this information to the Capacity Desk.
2. If the Capacity Desk receives a notification from the Outage Desk that the NI S>N OTC is below the amount necessary to return the Canadian entitlement the Capacity Desk will then:
  - a. Post non-target WNI S>N preschedule forecast
    - Break-out hours of PSANI Advisory for posting on 'Known Constraints' page.
  - b. Post advisory for potential scheduling limit enforcement to occur on Real Time on OASIS Known Constraints and Outages page.
    - i. Break-out hours of PSANI Advisory for posting on 'Known Constraints' page.
    - ii. If Notice is received during normal business hours after preschedule starts and before enters Real-time arena, Capacity Desk updates 'Immediate to Near-Term Changes to Outage Plans' section of 'Known Constraints' page.
  - c. Enter S>N WNI OTC into account 529993 via the NFP Share Calculations in the Transmission Availability and Inventory Management (TAP) system.
  - d. PSE's share of NI S>N is based on the non-target OTC.

- e. Use standard procedure for WNI curtailment spreadsheets, using non-target WNI OTC. Do not notify customers of pro-rata share for this path.
- f. Capacity desk will phone customers in the Northern Puget Sound area (PBL, SNO, SCL, PSE, and Intalco) the afternoon prior to the preschedule day(s).
  - i. Advise customers scheduling limits may have to be imposed on Real Time.
  - ii. Give customers the PSANI scheduling limit amounts that they potentially may need to cut to if procedure is implemented on Real Time.
  - iii. Stress that notification is strictly advisory, and forecasted limits are subject to change.
  - iv. Stress that scheduling limit advisory is separate from normal pro rata share amounts on the WNI.
  - v. Notify PowerEx Cash Desk of PSANI advisory. There are no numbers to share with them other than the posted NI forecast.
- g. Scheduling limits will not be imposed on preschedule. If coordinated changes occur before 0900 hours on the morning of preschedule, OTC updates and advisory notifications will be issued as appropriate.
- 3. Capacity Desk will provide standard capacity spreadsheets to preschedule and Real Time stating:
  - a. There exists a possibility of scheduling limits.
  - b. Estimated scheduling limits.
- 4. Preschedule will be alerted that they are not to sell hourly firm transmission on the NI in the South to North direction.

**B. Preschedule Procedure**

- 1. Scheduling limits for the Northern Puget Sound area utilities (PBL, SNO, SCL, PSE and Intalco) will not be used on preschedule.
- 2. Use the OTC in the capacity accounts as populated by the Capacity Desk. (RODS account 529995.)
- 3. Take schedules from Northern Puget Sound area utilities as normal.
- 4. If the capacity desk has flagged hours for scheduling limits, then:
  - a. Do not sell S>N hourly firm on the NI for flagged hours.
  - b. Hourly non firm may be sold.
  - c. Allow full Canadian Entitlement amount to be scheduled, even if the "NF Min to Sell" line in the Northern Intertie S>N Sales Summary Display is negative.
  - d. Accept NI N>S schedules, including non firm and hourly firm.

- e. At the end of the preschedule day, look in account 529999, total schedules between the U.S. and Canada.
- 5. If 529999 is in the S>N direction and greater than the NI OTC (located in account 529995):
  - a. Cut hourly non firm as necessary to decrease the net schedule in the S>N direction.
- 6. If after making non firm cuts:
  - a. Net NI schedule is N>S, OR
  - b. Net NI schedule is S>N and less than OTC.

You do not need to notify Real Time.
- 7. If the S>N net schedule in 529999 still exceeds the NI OTC (529995):
  - a. Log note problem hours where net NI schedule exceeds OTC.
  - b. Verbally notify Real Time lead of those hours where net NI schedule exceeds OTC.

#### C. Real Time

##### Within Hour Real-Time Curtailments:

- 1. If Dispatch calls and indicates that within hour cuts are needed in the South to North direction on the N.I. then real-time schedulers should:
  - a. Cut the amount specified by AGC dispatcher in the following order:
    - i. Cut S>N PTP non-firm.
    - ii. Cut S>N NT non-firm.
    - iii. Cut S>N Canadian Entitlement (PBL S>N Northern Intertie)
- 2. **DO NOT IMPLEMENT PSANI DURING WITHIN HOUR EMERGENCIES.**
- 3. If within hour cuts are called for between half past the hour and the top of the hour, you will not implement PSANI for the next scheduling hour. Implement for the scheduling hour after next.
- 4. If within hour cuts are called for between the top of the hour and half past the hour, you will need to implement PSANI for the next scheduling hour.
- 5. If Puget Sound area customers cannot be notified of scheduling limits by half past the hour, **DO NOT** implement PSANI for the next scheduling hour. (For example, if all Puget Sound area customers cannot be notified of scheduling limits by 0530, then **DO NOT** implement PSANI until HE 8. But if all Puget Sound area customers can be notified of scheduling limits no later than 0530, implement PSANI for HE 7.)

##### Defining a PSANI Advisory:

- 1. There are two situations that will trigger a PSANI advisory:

- a. A within hour real-time emergency (initiated by RAS dispatcher):
  - i. Due to Real-time, unplanned loss of line, equipment, etc.
  - ii. Start working with RAS dispatcher to determine whether or not a real-time PSANI advisory is necessary and get a Target OTC and an OTC for the next hour PSANI will be implemented.
  - iii. Continue as long as RAS dispatcher has S>N OTC that is lower than the scheduled Canadian Entitlement Return.
- b. A Prescheduled PSANI advisory (initiated by outage office on Preschedule):
  - i. Due to prescheduled outage for scheduled maintenance, nomogram, temperature, etc.
  - ii. For every hour there is a prescheduled PSANI advisory, call the RAS dispatcher to determine whether or not PSANI will need to be implement for the next scheduling hour.
  - iii. Obtain Target OTC and OTC for next scheduling hour.

**When PSANI Advisory is in Effect:**

- 1. Go to "PSANI WORKSHEET" located in the day's curtailment spreadsheet or the Real Time Team website.
- 2. Begin with Step 1: Implement or not?
- 3. Enter RODS account 529999 into PSANI worksheet in specified cell.
- 4. Call Powerex between the top of the scheduling hour and 10 after the hour.
  - a. Inform them you are in a PSANI advisory situation.
  - b. Get Powerex's projected net change for that scheduling hour.
  - c. Enter Powerex's projected net change into PSANI worksheet in Step 1 specified cell.
    - If projected net change is N>S, enter negative number.
    - If projected net change is S>N, enter positive number.
  - d. PSANI worksheet will calculate **Estimated Net Schedule**.
- 5. If PSANI worksheet says to proceed to next step (in cell C12):
  - a. Cut all non-firm S>N schedules on the NI.
  - b. Re-check account 529999 and reenter value into PSANI worksheet into specified cell.
  - c. If PSANI worksheet still says to proceed to next step, proceed to Step 2: PBL Buy-Sell Schedule.

6. Enter RODS Account 505950 (PBL/PWX CE Buy-Sell amount) into PSANI worksheet specified cell.
7. Call PBL and tell them Buy-Sell Schedule amount to implement as specified by PSANI worksheet.
8. Enter Buy-Sell schedule into RODS account 705615.
9. Proceed to Step 3 of PSANI worksheet and Reevaluate Implementation:
  - a. Re-check account 529999 and reenter value into Step 3 of PSANI worksheet  
 (Now the net NI schedule in 529999 includes the Canadian Entitlement and the PBL Buy-Sell schedule.).
  - b. If PSANI worksheet says to implement PSANI, proceed to next step below.
  - c. PRINT PSANI worksheet.
10. If notifications can be made prior to half past the hour, then notify dispatch and **implement PSANI**.  
 If notifications *cannot be made before half past the hour*, use the OTC (**NOT** the higher, target OTC) and cut S>N Northern Intertie as indicated by NI S>N Sales Summary. You may also use TAP's Real-Time Curtailment tool. Notify PBL and Powerex.
11. Call RAS dispatcher, and report the Estimated Net Schedule from PSANI Worksheet Step 3.
  - a. RAS dispatcher will recalculate the new S>N Target OTC.
  - b. Enter Target OTC into PSANI worksheet step 3 (cell B29).
12. Do not sell S>N Northern Intertie non-firm transmission during PSANI implementation.
13. Input the Target Westside OTC into TAP (NFP Share Calculations) and the Eastside and Total into standard RODS accounts 529991 and 529995.
14. Call PS Transmission and notify them of the S>N Westside Northern Intertie.
15. RAS dispatcher will send up scheduling limits to PSANI TAP screens.
16. NPSL alarm has sounded on RODS Real Time Alarm Screen.
  - a. Using E-tagging box, go to TAP at <http://ccweb/taim/index.html>
    - i. Click on "Path Use Summary."
    - ii. Login as Name: rt1, use current TAP password.
    - iii. Click on "PSANI" path selector box to display scheduling limits.
17. PSANI has two pieces to implement.
  - a. Using TAP PSANI function,

- i. On TAP PSANI display, scheduling limits are displayed as OTC. **(PRINT)**
  - ii. Fill in OTC numbers for SCL, PS, SNO and A-IN in PSANI worksheet's specified cells. (You might have already done this from numbers given to you by RAS dispatcher.)
  - iii. Clearly communicate scheduling limit to each utility. Real time scheduler should state to customer that we are in a PSANI situation for next hour, hour ending X.
  - iv. The individual utilities are responsible for determining their current use of BPA Federal Transmission System.
  - v. **Lognote the scheduling limit amounts communicated to each entity.**
  - vi. Individual customer must communicate action taken to real-time scheduler.
- b. Cut Canadian Entitlement.
  - i. In PSANI worksheet, go to Step 3.
  - ii. Cut Canadian Entitlement by amount specified in Red. Phone PBL and Powerex.
- 18. If NI S>N Sales Summary is negative after N>S Powerex have been called in, cut Canadian Entitlement by amount over. You cannot go into the hour with a negative on the Sales Summary.
- 19. **Print TAP PSANI screens and PSANI Worksheet for each hour PSANI scheduling limits are in effect.**
- 20. Leave all documentation with Real-time Technical Lead (Vicki).
- 21. Log note any action taken involving enforcement of the Puget Sound area scheduling limits, including total amount cut for each entity, and the schedules that were adjusted.
- 22. **Do not accept south to north hourly firm schedules over the Northern Intertie for hours when a target OTC is given.**

**Special Situation: Munro Controlling**

If Munro is controlling in a *non-drill* situation, do not implement PSANI. Cut based on the Northern Intertie Sales Summary.

### III. Discussion

The Canadian Entitlement is part of the 1964 Columbia River Treaty. The treaty required construction of three Canadian storage dams - Mica, Keenleyside and Duncan - and allowed the U.S. to construct a dam, Libby Dam in Montana, which impounds water upstream into Canada. The Treaty required the U.S. to return to Canada half of the electric power benefits produced in the U.S. from the Canadian storage projects beginning April 1, 1998.

Due to outages, increased load, and other system conditions in the Puget Sound area, congestion can occur south of the U.S./B.C. border. If congestion occurs on the U.S. side of the border that would restrict return of the Canadian Entitlement, documents related to the Treaty specify that BPA is to curtail the Canadian Entitlement and all other uses of the congested path on a pro rata basis. In order to do this, BPA finds it necessary to manage schedules on the U.S. side of the Northern Intertie. BPA has decided to use transmission scheduling limits in the Puget Sound area when S>N Westside Northern Intertie OTC drops below the contract capacity for the return of the Canadian Entitlement. Please see Appendix B for a visual representation of this problem.

Scheduling limits will only affect schedules on the Puget Sound Area entities utilizing the Federal Columbia River Transmission System. These entities are Puget Sound Energy, Seattle City Light, Snohomish PUD, Intalco and some BPAT NT customers in the Puget Sound Area (Blaine, Sumas, Tanner Electric, Orcas Power and Light and Whatcom PUD). Schedules between entities in the Puget Sound Area will not be affected, nor will schedules acting as a counter to S>N flows. Schedules moving into the Puget Sound area from East of the Cascades and from the South will be subject to scheduling limits.

BPAT is utilizing a target S>N OTC over the Westside Northern Intertie only when S>N OTC is not sufficient to allow the Canadian Entitlement to be fully returned. BPAT's Capacity Desk procedure will ensure that Puget Sound Area Entities are given warning of when the potential to enforce scheduling limits on Real Time may be necessary. This warning will be posted on BPAT's OASIS site, and also verbally communicated to Puget Sound Area entities by BPAT's Capacity Desk. Preschedule will utilize the non-target OTC, and notify Real Time if conditions indicate that PSANI scheduling limits may need to be enforced on Real Time. If enforcement of scheduling limits becomes necessary, it will occur on real time. The need to enforce the scheduling limits will be determined by the net schedule over the NI. If the net NI schedule is in the North to South direction, or it is the South to North direction and less than the target OTC, then there is no need to impose scheduling limits.

If it is necessary to enforce scheduling limits on real time, Puget Sound Area entities will need to reduce schedules moving into the Puget Sound Area. For example, Colstrip Puget to Puget or PBL to Puget schedules. Other options are for Puget Sound Area entities to purchase power from Canada (but not West Kootenay since that energy must come into the Puget Sound area from the East), to replace schedules that would be cut entering the Puget Sound area from the South or the East with schedules from B.C. or from within the Puget Sound Area or for entities in the Puget Sound Area to reduce load.



#### IV. Revisions

1. May 23, 2002: Rewrote Real Time procedure to resemble a more step by step format. Rewrote Appendix D. Updated Appendix A contacts.
2. February 24, 2003: Updated links to website and login information. Updated Appendix D information.
3. April 9, 2003: Revised Preschedule procedure to allow S>N non firm to be accepted during preschedule. Clarified Capacity Desk procedure.
4. August 10, 2003: Replaced "modified OTC" with "target OTC" to add clarification. Added NI net schedule check to Real Time section of procedure.
5. September 26, 2003: Revised and clarified procedure for all desks. Updated Capacity Desk and Preschedule to use the non-target OTC. Allowed preschedule to schedule the full amount of the Canadian Entitlement. In Real Time procedure, added net Northern Intertie check to determine whether or not scheduling limits should be enforced. Disallowed Real Time to net firm Canadian Entitlement against non firm N>S sales during PSANI implementation.
6. February 18, 2004: Rewrote Real Time procedure in light of January 30, 2004 PSANI implementation event. Revised Capacity Desk procedure. Updated Appendix A. Added Appendix E: PSANI terms and definitions. Added Appendix F: PSANI Scheduling Limits Guide for Customers.
7. March 4, 2004: Section C5 added to clarify timing regarding implementing PSANI.
8. June 30, 2004: Section C: When PSANI Advisory is in Effect: changed to accommodate PBL and Powerex Hourly Buy-Sell Agreement. In effect July 1, 2004 to October 31, 2004. Updated Appendix A.

## Appendix B: Puget Sound Area Diagram

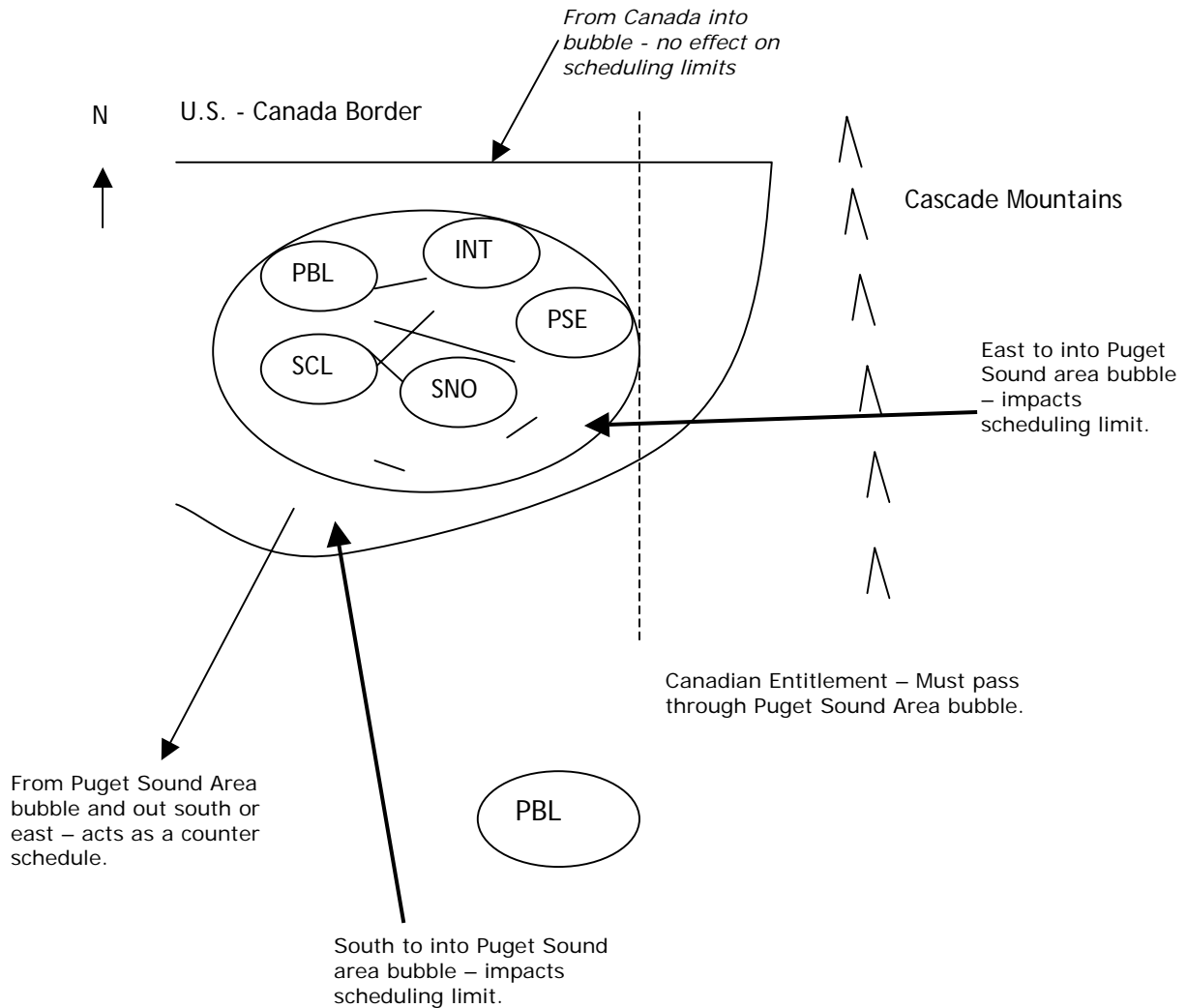


Figure A.1

- Schedules between the Puget Sound Area utilities do not impact the scheduling limits.
- Schedules leaving the Puget Sound area bubble in the South or East direction reduce the scheduling limit by acting as counter schedules.
- Schedules coming into the Puget Sound area bubble from the South and East impact the scheduling limits and are subject to scheduling limits enforcement.

## **Appendix E: PSANI Terms And Definitions**

**Within Hour:** A cut that occurs for the hour that you are in. For example, if the clock time is 1325, Real-time schedulers are in HE 14 and are taking schedules for the next hour, HE 15. A within the hour cut might occur at 1335 for HE 14, the hour you are in, as opposed to the hour you are scheduling for.

**Canadian Entitlement:** The energy that BPA must return to Canada in exchange for Canada building large storage dams and the U.S. building Libby Dam in Montana, which impounds water upstream into Canada. In practical terms, the Canadian Entitlement is the only long-term firm commitment that BPA Transmission allows South to North on the Northern Intertie. Canadian Entitlement energy is prescheduled into TBL RODS accounts 730103 and 730104.

**PSANI Worksheet:** Excel Spreadsheet developed to help Real Time schedulers through the PSANI process. Located in the daily Curtailment Spreadsheets e-mailed out to TMS by the Reservation Desk. Found under the tab "PSANI Worksheet."

**Powerex's Projected Net Change:** The projected net change of schedules over the Northern Intertie that have not yet been called in and scheduled with BPA Transmission for the coming hour.

**Estimated Net Schedule:** Between the top of the hour and approximately 10 after the hour, the Net Schedule across the Northern Intertie (located in account RODS 529999) minus Powerex's projected net change.

**OTC:** Standard Projected OTC that is computed via nomogram hourly by RAS dispatcher in coordination with BCTC.

**Target OTC:** OTC in PSANI implementation situation computed hourly by RAS dispatcher. Target OTC will lower than the OTC since N>S counter-schedules are being taken into account. Target OTC assumes that PSANI has been implemented, and that Puget Sound area utilities have appropriately decreased their use of BPA's Federal Transmission System.

**Scheduling Limits:** The amount of usage allowed by Puget Sound Area utilities of BPA's Federal Transmission System. Puget Sound area utilities must adhere to scheduling limits in order for the higher, Target OTC to be valid.

## Appendix F: PSANI (Puget Sound And Northern Intertie) Scheduling Limits Guide For Customers

This should be used as a guide whenever there is either a PSANI Advisory in effect or an actual PSANI Implementation.

### PSANI ADVISORY

An advisory is typically issued during pre-schedule for any hour during the next day where the forecasted S>N Northern Intertie capacity is less than the Canadian Entitlement Return. This advisory is posted on OASIS. **This advisory is intended to help the customer plan ahead in case BPAT real time scheduling calls to implement PSANI.** An advisory could also be issued in real time for an unplanned equipment failure, line loss, etc. that may cause or does cause a reduction in S>N capacity to a level that threatens the Canadian Entitlement Return.

### **PSANI IMPLEMENTATION**

Implementation will always be for the next scheduling hour and will only occur if certain time limits are met to give all customers adequate notification. Additionally, all Northern Intertie S>N Non-firm schedules would have already been curtailed before proceeding with PSANI Implementation. Finally, PSANI Implementation will never occur within-hour. Normal Northern Intertie curtailment procedures would be used whenever there is a within-hour reliability issue or whenever the time limit for all customer notifications cannot be met for PSANI Implementation.

## **CUSTOMER ACTIONS**

1. By :30 minutes past the current hour, BPAT real time scheduler calls with PSANI Scheduling Limit for each utility for the next scheduling hour. BPAT real time scheduler will state that we are in a PSANI situation for the next hour, hour ending XX, and your scheduling limit is XX.
2. By :40 minutes past the current hour, the Customer will call the BPA Tx Scheduler and report the actions taken to reduce their usage of BPA's Federal Transmission System, including reductions in interchange schedules.

## **SEATTLE CITY LIGHT**

1. Reduce any S>N schedules that sink with Seattle City Light.
2. Reduce any E>W schedules that sink with Seattle City Light, including:
  - a. Any combination of Boundary schedules including Boundary schedules that sink with Seattle City Light and Boundary regulating and contingency reserves to be utilized for SCL system contingencies.
  - b. Any Mid-C schedules.

## **PUGET SOUND ENERGY**

1. Reduce any S>N schedules that sink with Puget Sound.
2. Reduce any E>W schedules that sink with Puget Sound, including any combination of Mid-C generation and schedules.

## **SNOHOMISH PUBLIC UTILITY DISTRICT**

1. Reduce any S>N schedules that sink with Snohomish.
2. Reduce any E>W schedules that sink with Snohomish.

## **ALCOA INTALCO**

1. Reduce any S>N schedules that sink with Alcoa Intalco.
2. Reduce any E>W schedules that sink with Alcoa Intalco.

## **PBL PUBLIC CUSTOMER LOAD NORTH OF SEATTLE**

1. Calculate amount to reduce for each PBL public customer North of Seattle (Blaine, Whatcom, Sumas, Orcas, and Tanner).
2. Resupply as necessary.
3. Phone BPAT real time scheduler with actions taken to reduce public customer load and resupply.

## **CANADIAN ENTITLEMENT**

1. Reduce Canadian Entitlement by amount specified by BPAT real time scheduler.